

# Best Management Practices

MISSOURI DEPARTMENT OF CONSERVATION



## Gray bat

*Myotis grisescens*

Common name • Gray bat

Scientific name • *Myotis grisescens*

Federal status • Endangered

State status • Endangered

### Ecology

Gray bats inhabit caves throughout the year. Most of Missouri's winter population hibernates in three caves, all of which are in the southern part of the state. In the spring, usually in April and May, these bats migrate to over 50 other caves scattered throughout the Ozarks. Migration from summer caves to winter hibernacula is more drawn out, beginning in August and going through early November. Adults mate in the fall prior to hibernating. Hibernation lasts from October through April. Gray bats hibernate in deep, vertical caves that trap cold air. Bats have the ability to lower their metabolism during hibernation, thereby reducing the amount of energy and food they use. However, they enter hibernation with only enough fat reserves to last until spring. Any disturbance to bats while they are hibernating can arouse them and possibly result in death by starvation if fat reserves are depleted.

In summer, pregnant females form maternity colonies in caves that have domed ceilings where the mothers can cluster together to keep their babies warm. Females produce only one offspring per year, usually in June. Males and first-year females (which do not bear young) form bachelor colonies in separate caves or, sometimes, in cooler portions of maternity caves. Gray bats forage up to 12.4 miles (20 km) from their summer roosts and feed on aquatic and terrestrial flying insects. They generally feed over water or in adjacent riparian vegetation.

### Reasons for Decline

Gray bats are sensitive to human disturbance of their roosts. In hibernacula, human disturbance causes the bats to use up vital fat reserves, their only source of energy throughout winter. In maternity caves, pregnant females may abort unborn young or panicked mothers may drop babies to their deaths if forced to flee from intruders. Severe or repeated disturbance may

cause reproductive failure of an entire colony.

Other reasons for the decline in gray bat populations include a decrease in the number of suitable caves because of climate changes in caves due to nearby deforestation. Deforestation between caves and rivers or reservoirs along migration and foraging routes also may increase the risk of predation on bats. Use of pesticides and insecticides may not only reduce food supply for bats but also will introduce poisons into the food chain.

### Specific Recommendations

It is important to protect caves and riparian corridors because gray bats use these areas for roosting and foraging.

→ Avoid human entry into gray bat caves during the season in which the bats are present. This is dependent upon whether the cave is a maternity or hibernation cave. Maternity and bachelor caves should be closed to human entry April 1 through October 1. Winter hibernacula should be closed to human entry October 1 through March 31.

→ Retain corridors of mature trees between bat caves and waterways to provide protection from avian predators between roosts and foraging areas.

→ Minimize logging and other deforestation activities, especially within a 100 foot buffer of the river or reservoir, to protect stream quality so the aquatic insect community remains healthy.

→ Avoid or minimize pesticide use where gray bats forage.

### General Recommendations

Refer to Management Recommendations for Construction Projects Affecting Missouri Karst Habitat and Management Recommendations for Construction Projects Affecting Missouri Streams and Rivers.

### Information Contacts

For further information regarding regulations for development near caves, streams and rivers, contact:

Missouri Department of Conservation  
Policy Coordination Section  
P.O. Box 180  
2901 W. Truman Blvd  
Jefferson City, MO 65102-0180  
Telephone: 573/751-4115

Missouri Department of Natural Resources  
Division of Environmental Quality  
P.O. Box 176  
Jefferson City, MO 65102-0176  
Telephone: 573/526-3315

U.S. Army Corps of Engineers  
Regulatory Branch  
700 Federal Building  
Kansas City, MO 64106-2896  
Telephone: 816/983-3990

U.S. Environmental Protection Agency  
Water, Wetlands, and Pesticides Division  
901 North 5th Street  
Kansas City, KS 66101  
Telephone: 913/551-7307

U.S. Fish and Wildlife Service  
Ecological Services Field Office  
608 E. Cherry Street, Room 200  
Columbia, MO 65201  
Telephone: 573/876-1911

## Disclaimer

These Best Management Practices were prepared by the Missouri Department of Conservation with assistance from other state agencies, contractors and others to provide guidance to those people who wish to voluntarily act to protect wildlife and habitat. Compliance with Best Management Practices is not required by the Missouri wildlife and forestry law nor by any regulation of the Missouri Conservation Commission. Other federal, state or local laws may affect construction practices.